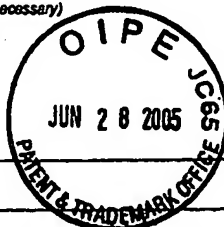


Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)



Sheet 1 of 3

Complete if Known

Application Number	10/815,312
Filing Date	April 1, 2004
First Named Inventor	Chen, Yung-Tin
Group Art Unit	1756
Examiner Name	<del>Rosasco, Stephen</del> John Ruggles

Attorney Docket No: MA-117

**US PATENT DOCUMENTS**

Examiner Initial *	Cite No	USP Document Number	Publication Date	Name of Patentee or Applicant of cited Document	Class	Subclass	Filing Date if Appropriate
JSR	A1	5,240,796 ✓	08/31/1993	Lee et al.	430	5	
	A2	6,057,063 ✓	05/02/2000	Liebmann et al.	430	5	
	A3	6,482,555 ✓	11/19/2002	Chen et al.	430	5	
	A4	6,523,165	02/18/2003	Liu et al.	716	21	
	A5	6,541,165	04/01/2003	Pierrat	430	5	
	A6	6,551,750 ✓	04/22/2003	Pierrat	430	5	
	A7	6,569,583 ✓	05/27/2003	Cho et al.	430	5	
JSR	A8	20030022074 ✓	01/30/2003	Nolscher	430	5	

**FOREIGN PATENT DOCUMENTS**

Examiner Initials *	Cite No	Foreign Document No	Publication Date	Name of Patentee or Applicant of cited Document	Class	Subclass	T <sup>a</sup>
---------------------	---------	---------------------	------------------	---	-------	----------	----------------

**OTHER DOCUMENTS -- NON PATENT LITERATURE DOCUMENTS**

Examiner Initials *	Cite No <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>a</sup>
JSR	A9	BERNARD, DOUGLAS A., et al., "Clear Field Dual Alternating Phase Shift Mask Lithography", <u>Optical Microlithography XV</u> , SPIE Vol. 4691, (2002), 999-1008	
	A10	BURKHARDT, M., et al., "Through Pitch Correction of Scattering Effects in 193 nm Alternating Phase Shift Masks", <u>Optical Microlithography XV</u> Vol. 4691, No. I, SPIE, (2002), 348-358	
	A11	CHA, HAN-SUN., et al., "A Study on Optimization of Alternating Phase Shifting Mask Structure", <u>21st Annual BACUS Symposium on Photomask Technology</u> , SPIE Vol. 4562, No. II, (2002), 1008-1016	
	A12	FERGUSON, RICHARD A., "Pattern-Dependent Correction of Mask Topography Effects for Alternating Phase-Shifting Masks", <u>SPIE Vol. 2440</u> , (2/95), 349-360	
	A13	GRIESINGER, UWE., et al., "Balancing of Alternating Phase Shifting Masks for Practical Application: Modeling and Experimental Verification", <u>Proc. of SPIE</u> , Vol. 4186, (2001), 372-383	
	A14	GRIESINGER, UWE., et al., "Transmission & Phase Balancing of alternating Phase Shifting Masks (5X)-Theoretical & Experimental Result", <u>19th Annual Symposium on Photomask Technology</u> Vol. 3873, No. I, SPIE, Published in: Monterey, US, (1999), 359-369	
	A15	IRIE, SHIGEO., "Sub-70-nm Pattern Fabrication using an Alternating Phase Shifting Mask in 157-nm Lithography", <u>Optical Microlithography XV</u> , SPIE, Vol. 4691, (2002), 1654-1664	
	A16	KANG, MYUNG-AH., "Feasibility evaluations of alternating phase shift mask for imaging sub-80nm feature with KrF", <u>Optical Microlithography XVI</u> , SPIE Vol. 5040, (2003), 1115-1124	
JSR	A17	KIM, KEEHO., et al., "Optimization of Process Condition to Balance MEF and OPC	

EXAMINER

John Ruggles

DATE CONSIDERED

2/23/06

Substitute Disclosure Statement Form (PTO-1449)

\* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. Applicant's unique citation designation number (optional) Applicant is to place a check mark here if English language Translation is attached

Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)



Complete if Known

Application Number	10/815,312
Filing Date	April 1, 2004
First Named Inventor	Chen, Yung-Tin
Group Art Unit	1756
Examiner Name	Rosasco, Stephen John Ruggles

Sheet 2 of 3

Attorney Docket No: MA-117

**OTHER DOCUMENTS -- NON PATENT LITERATURE DOCUMENTS**

Examiner Initials*	Cite No <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
JSR		for Alternating PSM-Control of Forbidden Pitches", <u>Optical Microlithography XV</u> , Vol. 4691, No. I, SPIE, (2002), 240-246	
	A18	KOO, SANG-SOOL., et al. , "Study on the Potentialities of sub-100nm Optical Lithography of Alternating and Phase-edge Phase Shift Mask for ArF Lithography", <u>20th Annual BACUS Symposium on Photomask Technology</u> , Vol. 4186, SPIE, (2001), 346-358	
	A19	KOSTELAK, R.L. , et al. , "Exposure Characteristics of Alternate Aperture Phase-Shifting Masks Fabricated using a Subtractive Process", <u>J. Vac. Sci. Tech. B</u> , Vol. 10(6), (Nov/Dec 1992), 3055-3061	
	A20	LEVENSEN, M.D. , et al. , "Phase Phirst! An Improved Strong-PSM Paradigm", <u>Proc. of SPIE</u> , Vol. 4186, (2001), 395-404	
	A21	LIN, CHIH-CHENG., et al. , "Alternating PSM defect printability at 193-nm wavelength", <u>21st Annual BACUS Symposium on Photomask Technology</u> Vol. 4562, No. II, SPIE, (2002), 1121-1125	
	A22	MAURER, WILHELM., et al. , "Proximity Effects of Alternating Phase Shift Masks", <u>19th Annual Symposium on Photomask Technology</u> , Vol. 3873, No. I, SPIE, (9/1999), 344-349	
	A23	MISAKA, AKIO., et al. , "Improved outline phase shifting mask for reduction of the mask error enhancement factor", <u>Optical Microlithography XVI, Proceedings of SPIE</u> , Vol. 5040, (2003), 1220-1230	
	A24	MURAI, SHIAKI., et al. , "Establishment of Production Process and Assurance Method for Alternating Phase Shift Masks", <u>20th Annual BACUS Symposium on Photomask Technology</u> , SPIE Vol. 4186, (2001), 890-901	
	A25	PETERSEN, JOHN.S. , et al. , "Designing Dual-Trench Alternating Phase-Shift Masks for 140 NM and Smaller Features Using 248 NM KRF and 193 NM ARF Lithography", <u>Proc. of SPIE</u> , Vol. 3412, (1998), 503-520	
	A26	PIERRAT, C., "Investigation of Proximity Effects in Alternating Aperture Phase Shifting Masks", <u>20th Annual BACUS Symposium on Photomask Technology</u> , Vol. 4186, SPIE, (2001), 325-335	
	A27	PIERRAT, CHRISTOPHE., et al. , "New alternating phase-shifting mask conversion methodology using phase conflict resolution", <u>Optical Microlithography XV</u> , Vol. 4691, No. I, SPIE, (2002), 325-335	
	A28	SAITOU, HIDETAKA., et al. , "Improvement of Alt-PSM Production Process Using Backside Phase Measurement Method", <u>21st Annual BACUS Symposium on Photomask Technology</u> Vol. 4562, No. II, SPIE, (2002), 1087-1095	
	A29	SHIN, IN-GYUN., et al. , "A Study on the effect of mask reduction ratio in alternating phase shift masks", <u>20th Annual BACUS Symposium on Photomask Technology</u> , Vol. 4186, SPIE, (2001), 309-315	
JSR	A30	SPENCE, CHRISTOPHER., et al. , "Integration of Optical Proximity Correction Strategies in Strong Phase Shifters Design for Poly-Gate Layers", <u>19th Annual Symposium on Photomask Technology</u> , Vol. 3873, No. I SPIE, (9/1999), 277-287	

EXAMINER

DATE CONSIDERED

2/23/06

Substitute Disclosure Statement Form (PTO-1449)

\* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 806. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. Applicant's unique citation designation number (optional) Applicant is to place a check mark here if English language Translation is attached

Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

PTO/SS08A(10-01)  
Approved for use through 10/31/2002. OMB 031-0001  
US Patent & Trademark Office U.S. DEPARTMENT OF COMMERCE

Complete if Known

Application Number	10/815,312
Filing Date	April 1, 2004
First Named Inventor	Chen, Yung-Tin
Group Art Unit	1756
Examiner Name	<del>Rosaseo, Stephen</del> John Ruggles

Sheet 3 of 3

Attorney Docket No: MA-117

**OTHER DOCUMENTS -- NON PATENT LITERATURE DOCUMENTS**

Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T
JSR	A31	TAN, SIA.K., "Optimization of Alternating PSM Mask Process for 65 nm Poly Gate Patterning Using 193 nm Lithography", <u>Optical Microlithography XVI, SPIE Vol. 5040, (2003), 1125-1136</u>	
	A32	THIELE, JORG., et al., "Introduction of full level alternating phase shift mask technology into IC manufacturing", <u>Optical Microlithography XV, Vol. 4691, No.1, SPIE, (2002), 89-97</u>	
	A33	TSAI, W., et al., "Technological Challenges in Implementation of Alternating Phase Shift Mask", <u>20th Annual BACUS Symposium on Photomask Technology, Vol. 4186, SPIE, (2001), 433-443</u>	
	A34	WESTERMAN, R., et al., "Plasma Etching of Quartz for the Fabrication of Alternating Aperture Phase Shift Photomasks: Etch Rate Uniformity Study", <u>20th Annual BACUS Symposium on Photomask Technology, Vol. 4186, SPIE, (2001), 316-324</u>	
	A35	WU, CLIVE., "Alternating PSM Design and Its Implications to the Design-to-Manufacturing Flow", <u>2, Numerical Technologies, Inc. 70 W. Plumeria Dr., San Jose, CA 95134, 7 pgs</u>	
	A36	YAMAMOTO, TOMOHIKI., et al., "Impact of Alternating Phase Shift Mask Quality on 100 nm Gate Lithography", <u>20th Annual BACUS Symposium on Photomask Technology, Vol. 4186, SPIE, (2001), 423-432</u>	
JSR	A37	YOON, SI-YEUL., et al., "Evaluation of various alternating phase shifting mask processes for KrF lithography", <u>21st Annual BACUS Symposium on Photomask Technology Vol. 4562, No. II, SPIE, (2002), 1017-1025</u>	

EXAMINER

DATE CONSIDERED

2/23/06

Substitute Disclosure Statement Form (PTO-1449)

\* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 809. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. Applicant's unique citation designation number (optional) \* Applicant is to place a check mark here if English language Translation is attached